

## Abstract

A scanning system and method for locating a point within a region. The method may: 1) determine or locate a region of interest in the region; 2) determine one or more characteristics of the region of interest within the region, wherein the region of interest includes the point of interest; 3) determine a continuous trajectory based on the one or more characteristics of the region of interest; 4) measure the region of interest at a plurality of points along the continuous trajectory to generate a sample data set; 5) perform a surface fit of the sample data set using the approximate model to generate a parameterized surface; and 6) calculate a location of the point of interest based on the parameterized surface. The method may include measuring the region at and/or near the calculated location to confirm the solution, and may also include generating output comprising the results.

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